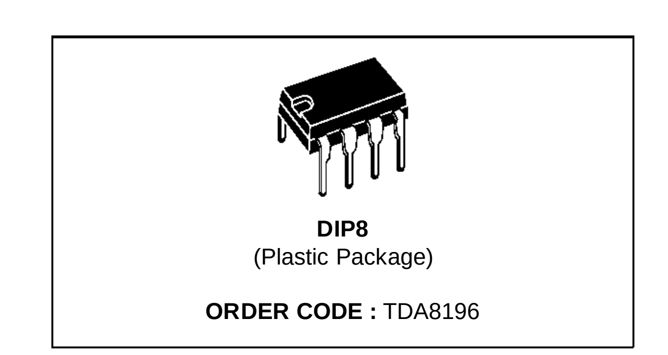




AUDIO SWITCH AND DC VOLUME CONTROL FOR TV

- TWO AUDIO INPUTS WITH SWITCHING FACILITIES FULLY COMPATIBLE WITH THE SCART EUROPEAN NORM EN 50049
- DC VOLUME CONTROL



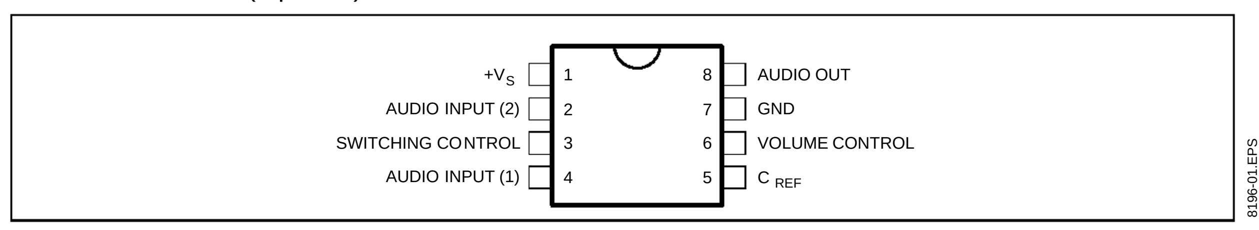
DIP8
(Plastic Package)

ORDER CODE : TDA8196

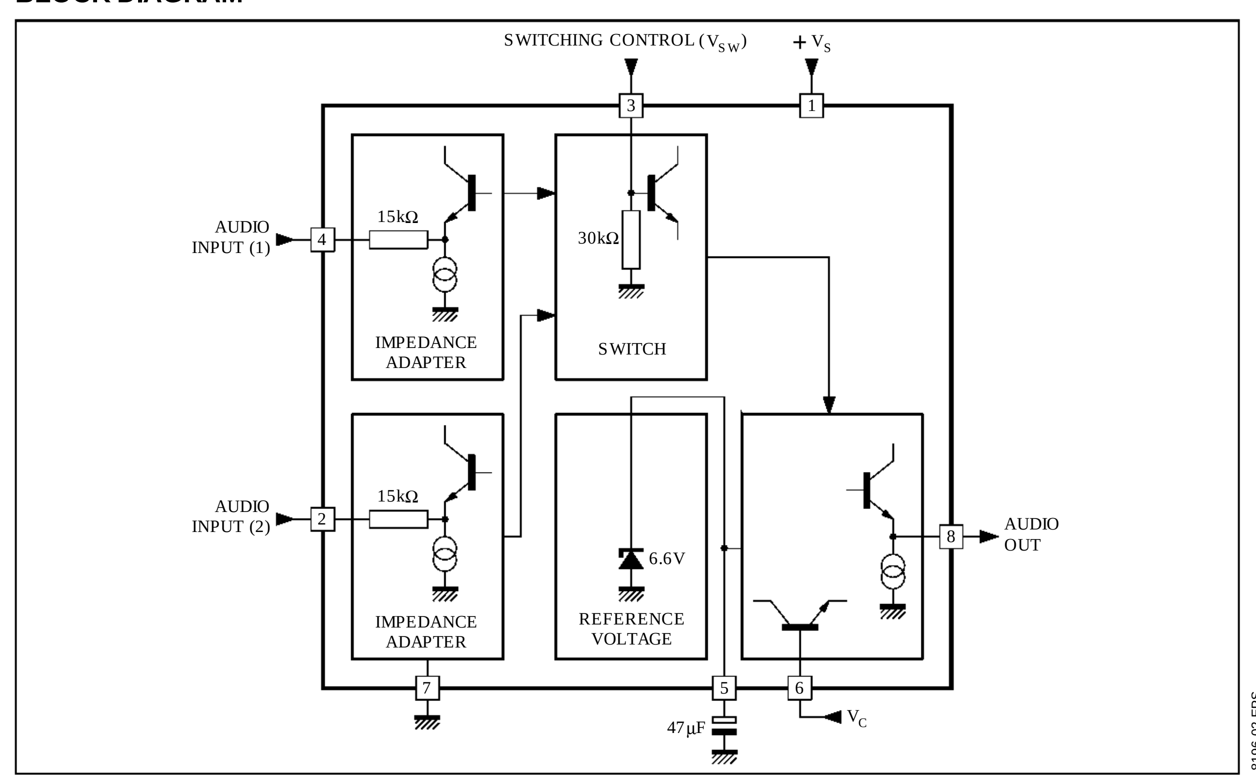
DESCRIPTION

The TDA8196 is a monolithic integrated circuit in DIP8 package intended for TV applications.

PIN CONNECTION (top view)



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_s	Supply Voltage (pin 1)	16	V
T_{stg}, T_j	Storage and Junction Temperature	– 55 to 125	°C
T_{amb}	Operating Ambient Temperature	0 to 70	°C

8196-01.TBL

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	200	°C/W

8196-02.TBL

ELECTRICAL CHARACTERISTICS

(refer to the test circuit, V_S = 12V, T_{amb} = 25°C unless otherwise specified)

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Supply Voltage	1		10.8	12	13.2	V
I_S	Supply Current	1	V_i = 0, V_C = 0.5V		12		mA
V_R	Reference Voltage	5			6.6		V
V_{SW}	Switching Voltage Audio Input 1 Audio Input 2	3		 0 8		 5 12	 V V
R_{SW}	Switching Input Resistance	3	V_{SW} = 12V	20	30		kΩ
C_{SW}	Switching Input Capacitance	3				10	pF
C_t	Crosstalk between Switched Inputs		Selective Volmeter (B_W = 8Hz), see Fig.1	70	90		dB
V_i	Audio Input Amplitude (1 or 2)	4 2			0.5	2	V_{RMS}
R_i	Audio Input Resistance (1 or 2)	4 2		10	13		kΩ
K_{min}	Output / Input Gain for Max Vol				0		dB
R_O	Audio Output Resistance	8			0.2	1	kΩ
K_V	Attenuation Range		Selective Volmeter (B_W = 8Hz), see Fig.2	70	90		dB
V_C	Control Voltage Range $K_V = K_{MAX}$ (Vol. min) $K_V = K_{MIN}$ (Vol. max)	6			 0.5 4.5		 V V
THD	Distortion	8	V_i = 2 V_{RMS} @ V_C = 4.5V		0.4	1	%
En	Output Noise Level	8	DIN45405 V_C = 0.5V Weighted		40		μV_{RMS}
En	Output Noise Level	8	DIN45405 V_C = 4.5V Weighted		120		μV_{RMS}
$\frac{K_V}{\Delta T_a}$	Vol. Attenuation Thermal Drift		T_{amb} = 0 to 70°C K_V = 30dB, see Fig.3		0.04		dB/°C
SVR	Supply Voltage Rejection	8	V_C = 0.5V, f = 100Hz V_{ripple} = 1V_{PP} Selective Volmeter (B_W = 8Hz), see Fig.4 and 5		38		dB
V_O	Output DC Shift	8	V_C = 0.5 + 4.5V, V_i = 2 V_{RMS}		0.25		V

8196-03.TBL

SGS-THOMSON MICROELECTRONICS

TEST CIRCUIT

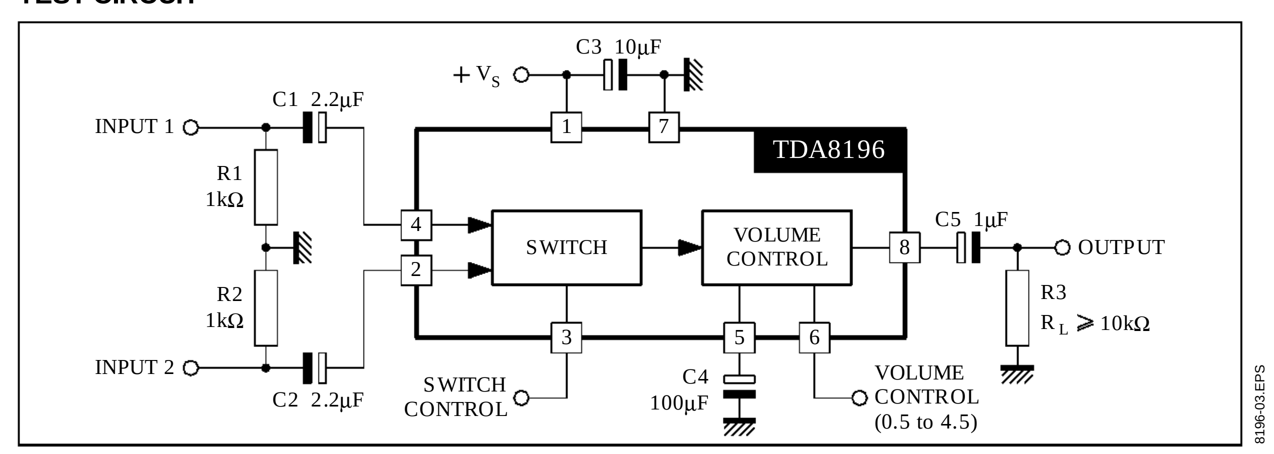


Figure 1 : TDA8196 Crosstalk

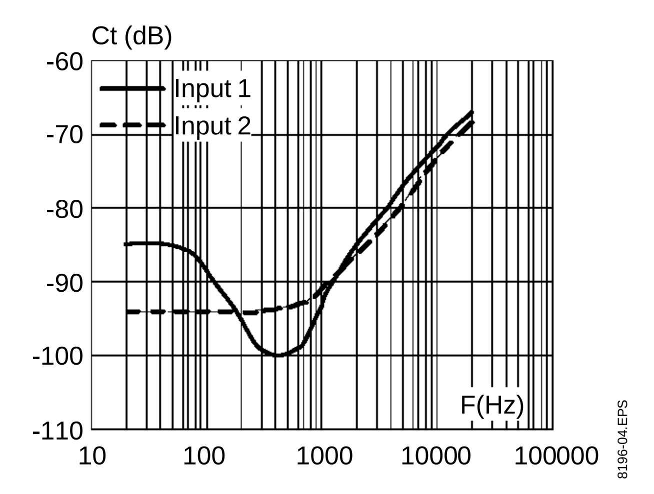


Figure 2 : Output Attenuation versus DC Volume Control Voltage

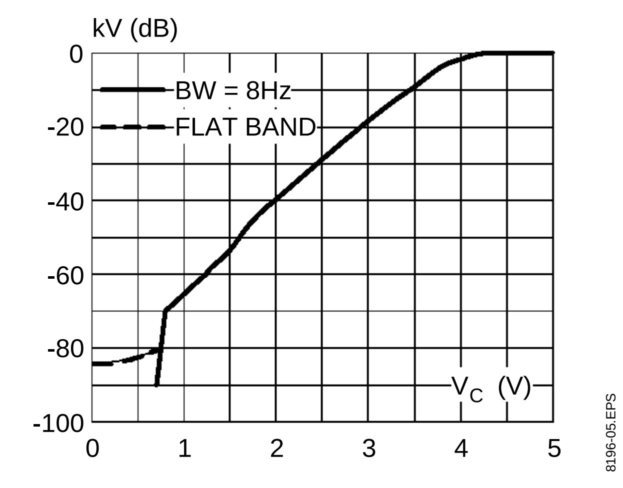


Figure 3 : K_v Drift vs. T_{amb} Variation

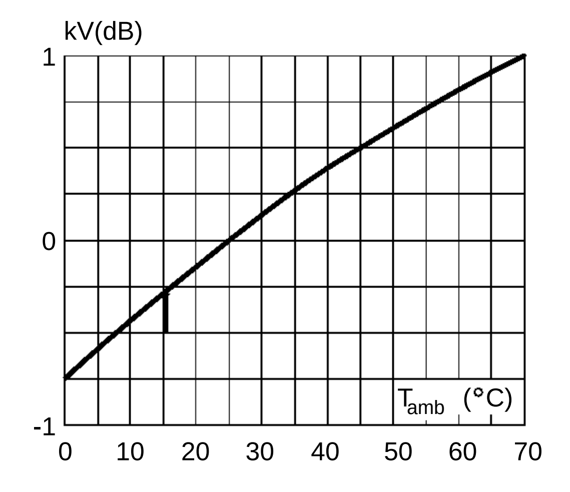


Figure 4 : SVR vs. Ripple Frequency

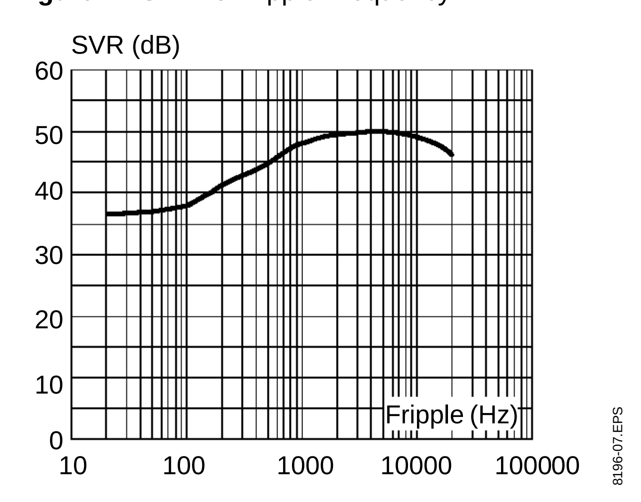
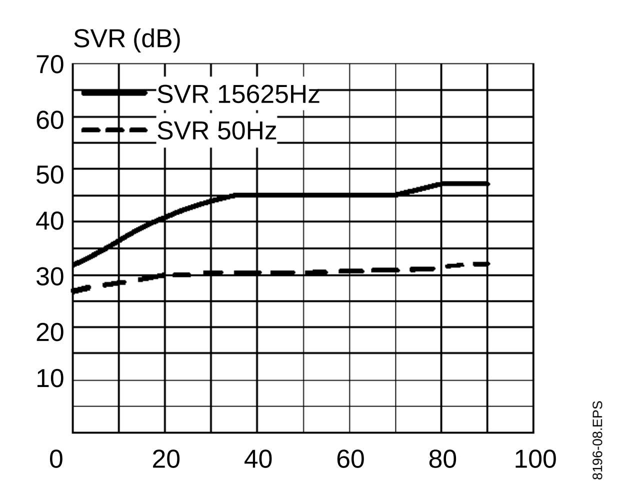
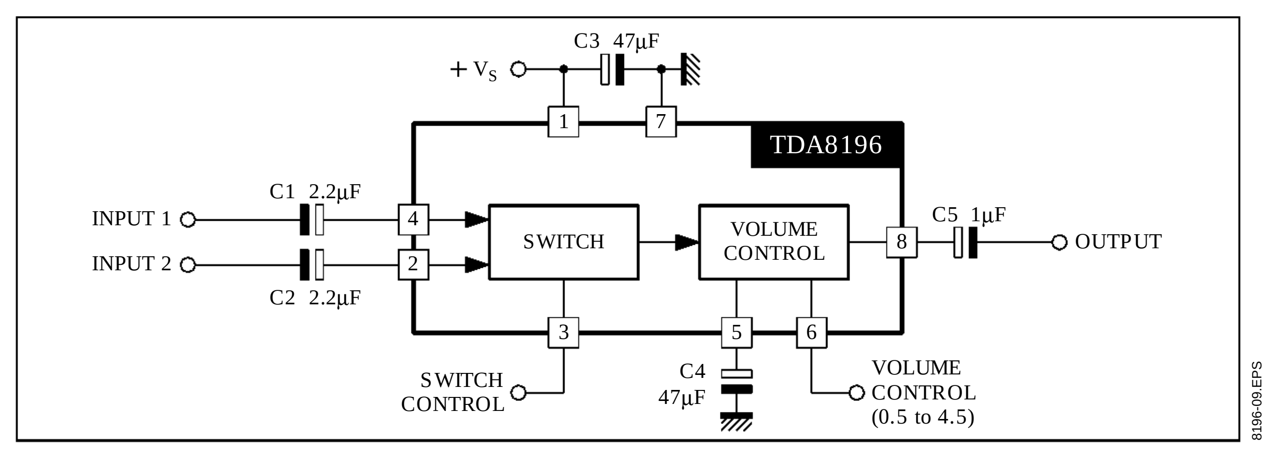


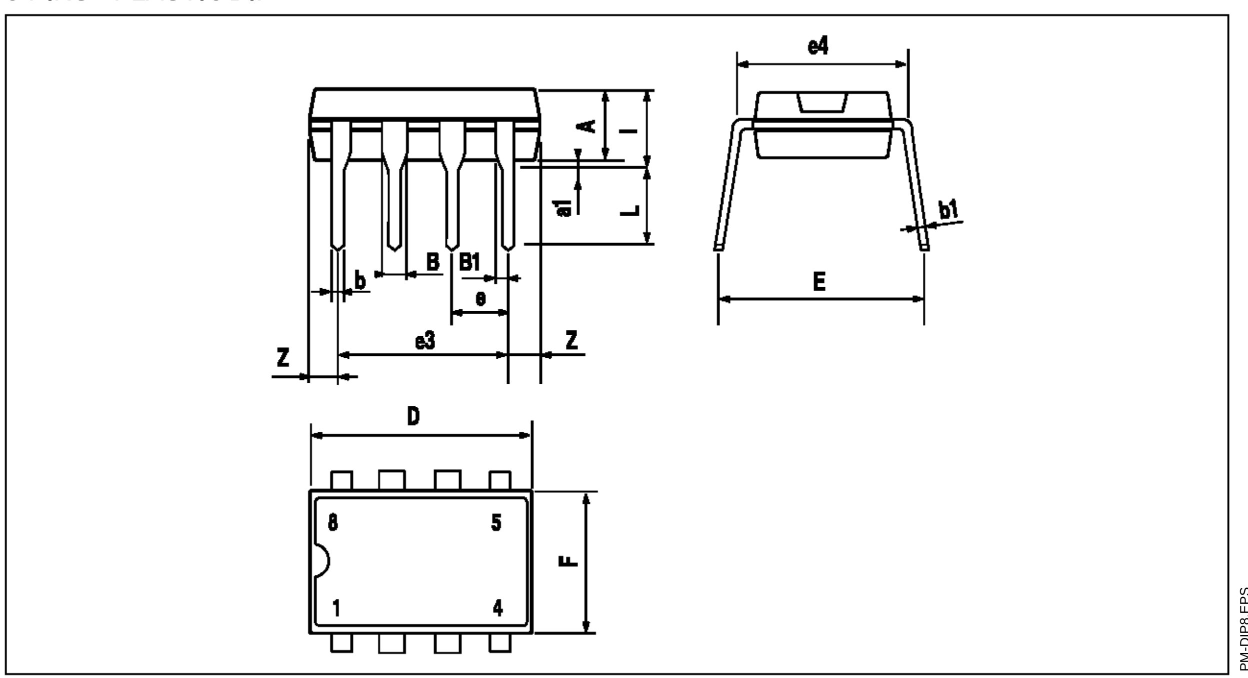
Figure 5 : SVR vs. Volume Attenuation



APPLICATION CIRCUIT



PACKAGE MECHANICAL DATA
8 PINS - PLASTIC DIP



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0260
I			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

DIP8.TBL

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No licence is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1996 SGS-THOMSON Microelectronics - All Rights Reserved

Purchase of I²C Components of SGS-THOMSON Microelectronics, conveys a license under the Philips I²C Patent. Rights to use these components in a I²C system, is granted provided that the system conforms to the I²C Standard Specifications as defined by Philips.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco
The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.

